ABSTRACT:

This study aims to trace changes in the dry spells over Peninsular Malaysia based on the daily rainfall data from 36 selected rainfall stations which include four subregions, namely northwest, west, southwest, and east for the periods of 1975 to 2004. Six dry spell indices comprising of the main characteristics of dry spells, the persistency of dry events, and the frequency of the short and long duration of dry spells will be used to identify whether or not these indices have increased or decreased over Peninsular Malaysia during the monsoon seasons. The findings of this study indicate that the northwestern areas of the Peninsular could be considered as the driest area since almost all the indices of dry spells over these areas are higher than in the other regions during the northeast (NE) monsoon. Based on the individual and the field significant trends, the results of the Mann–Kendall test indicate that as the total number of dry days, the maximum duration, the mean, and the persistency of dry days are decreased, the trend of the frequency of long dry spells of at least 4 days is also found to decrease in almost all the stations over the Peninsula; however, an increasing trend is observed in the frequency of short spells in these stations during the NE monsoon season. On the other hand, during the southwest monsoon, a positive trend is observed in the characteristics of dry spells including the persistency of two dry days in many stations over the Peninsula. The frequency of longer dry periods exhibits a decreasing trend in most stations over the western areas during both monsoon seasons for the periods of 1975 to 2004.